Design and Technology Learning Journey Year 7

Autumn Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	
Topic	Welcome To D&T	Block Bot Baseline to assess skills across 11 key areas.	Block Bot Baseline	Block Bot Baseline	Block Bot Baseline	Block Bot Baseline	Block Bot Baseline	Block Bot Baseline	**HALF TERM**
Challenge Objective and Content (for all learners)	Introduction to Design and Technology. Biomimicry combined design task. *Challenge: What aspects of nature can you use to inspire your designs?*	Brief, mind-mapping and introduction to designing. *Challenge: Can you list 8 ideas for a Block Bot?*	*introduction to designing* *Challenge: Why is it important to be able to communicate your ideas clearly and accurately?*	Finish designing and guide pupils on annotation. Start planning the Block Bot including which components students will need. *Challenge: Why is it important to be able to communicate your ideas clearly and accurately?*	Last lesson on planning the Block Bot *Challenge: How is planning useful when making a product?*	Introduction to the workshop. Health and Safety Activity. Bench expectations. Where resources and equipment are stored. Introduction to the sketchbook. Labelling and ACCESS FM sheet *Challenge: What hazards can you identify in the workshop?*	Introduction to tools – Tenon/ Coping saw, bench hook, solo clamp. *Challenge: How will you make sure you choose the right saw and use it correctly to start your Block Bot?*	Second lesson on making the Block Bot. Introduction to Cordless Drill. *Challenge: How will you make sure you use the drill correctly in order to make a successful Block Bot?*	
Inspire Opportunities	*How do the needs of the user influence your designing?*	*What will you need to consider when you are making the Block Bot?*	*Why is a three-dimensional drawing more useful?*	*How could your design be developed so that it is unique and challenges your making skills?*	*What quality control and quality assurance measures can you plan which will ensure your final Block Bot is like your plan?*	*How does keeping records improve health and safety standards?*	*Are you using the quality control points that you included in your plan?*	*How could use measurement to ensure your Block Bot has components in the correct places?*	
Assessment Opportunities	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	Block Bot Baseline	Block Bot Baseline	Review of Block bot	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	**CHRISTMAS**
Challenge Objective and Content (for all learners)	Final lesson on making the Block Bot. *Challenge: What techniques and processes will you use to make sure your Block Bot is finished to a high standard?*	Evaluate Block Bot / write definitions for keywords/ complete the Maths question. *Challenge: Can you identify the successes and weaknesses of your Block Bot and suggest how it could be improved?*	Math's intervention and chance to reflect and improve on project. *Challenge: How can you use your math's knowledge relating to area to solve the question?*	Introduction to project. Header sheet. Exploring the client & brief and mind mapping ideas. (applying materials and tools knowledge from Block Bot) *Challenge: Can you explore a range of relevant ideas and expand these into sentences?*	Theory lesson on Natural Timber and Manufactured Board. Definitions and examples in book. *Challenge: Can you identify and explain the differences between natural timbers and manufactured board*	Introduction to design brief and specification. Writing a simple specification *Challenge: Can you write simple what / why statements for your product.*	
Inspire Opportunities	Does your Block Bot match your original plan?	*Can you explain why problems occurred and offer solutions for how this could be avoided next time?*	*What two methods can be used to calculate the number of smaller boxes which would fit into the larger packing box?*	*What are the differences between the needs of the customer and the client?*	*Can you identify the different uses for the different timbers and boards and explain why?*	Can you explain how you will achieve your specification points?	
Assessment Opportunities	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	

Design and Technology Learning Journey Year 7

Spring Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	**HALF TERM**
Challenge Objective and Content (for all learners)	Designing the shape of the Treasure box and how lid will look and function. Drawing and shading skills. **Challenge:** Can you think of a range of ideas and communicate clearly through drawing?	Designing with focus on annotation. Introduction to planning the making. **Challenge:** Can you add sentences which explain your ideas in more detail and identify problems/ solutions?	Planning of making. Identify the order of production and the tools required. **Challenge:** What are the correct steps when making the treasure box and what tools will you need?	Manufacturing: Introduction to the making. Demonstration of marking out tools and recap of sawing / drilling techniques **Challenge**: How will you use the saw/ drill accurately to make a successful box?	Manufacturing: Making central part of box. **Challenge:** How will you use the saw/ drill accurately to make a successful box?	Manufacturing: Making central part of box. **Challenge:** How will you use the saw/ drill accurately to make a successful box?	
Inspire Opportunities	How is 3D drawing a more useful way of communicating your ideas?	Can you use annotation to link back to the needs of the client and the customer?	*What quality control and quality assurance measures can you plan which will ensure your final Block Bot is like your plan?*	*What strategies can you use to plan for accuracy?*	*What does "working within tolerance mean"?*	*Can you apply your previous knowledge to avoid mistake and work within tolerance?*	
Assessment Opportunities	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	
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	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	**EASTER**
Challenge Objective and Content (for all learners)	Pause manufacture for Lid Development. Pupils introduced to concept of modelling and then applying this to explore different ways lid could look/ function. (pivot hinge/ traditional hinges/ choice of materials) **Challenge:** Can you develop one alternative lid idea to the one you have been shown?	Manufacturing the lids based on the new knowledge from the modelling lesson. Demonstration of band facer. **Challenge:** Can you use knowledge from the modelling lesson to make a unique and interesting lid?	Manufacture of treasure box **Challenge:** How will you use the tools and processes accurately to make a successful box?	Manufacture of treasure box. Demonstration of how to make the pivot hinge and stopper **Challenge:** How will you use the tools and processes accurately to make a successful box?	Manufacture of treasure box. Finishing techniques. Sanding and finishing boxes **Challenge:** What preparation/ techniques could you use to make sure your box is finished to a high standard?	Manufacture of treasure box. Demonstration of finishing techniques – paint/ oil. **Challenge:** What preparation/ techniques could you use to make sure your box is finished to a high standard?	
Inspire Opportunities	*How and why is hand modelling / CAD modelling useful?*	*Can you develop your box so it challenges your making skills.*	*How are you going to plan for accuracy?*	*How are you going to plan for accuracy?*	*What QC checks could you make to check the standard of your box?*	*Why is a high-quality finish important to the client and the customer?*	
Assessment Opportunities	Peer feedback: pupils will ask a friend to comment on their lid design. Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	

Design and Technology Learning Journey Year 7

Summer Term

	Week 1	Week 2	Week 3	Week 4	Week 5	
Topic	Treasure Box. An introduction to Timber based materials	Treasure Box. An introduction to Timber based materials	Isometric Drawing and shading techniques	Isometric Drawing and shading techniques	Isometric Drawing and shading techniques	
Challenge Objective and Content (for all learners)	Manufacture of treasure box. Finishing boxes, photographing boxes. Completing a costing exercise. **Challenge:** Are there any final changes you can make to improve the standard of your box?	Introduction to evaluation. Pupils identifying strengths and weaknesses of their product and asking for peer feedback. **Challenge:** Why is evaluation important and when should it be used?	Introduction to isometric drawing - What is Isometric drawing, key facts. *Challenge: Can you independently draw a range of cubes/ cuboids using the method shown?*	How to draw basic shapes. **Challenge:** Can you independently draw a cylinder?	How to shade to show a range of tone and different types of materials *Challenge: What characteristics does wood have which you can use in your shading?*	**HALF TERM**
Inspire Opportunities	*What QC checks could you make to check the standard of your box?*	*What tips and advice would you give to a Year 7 who was about to complete this project?*	What is the connection between drawing isometric cuboids and drawing products for Design and Technology?	*Can you combine two or more isometric shapes to create a more completed shape?*	*How will you show the differences between glass/ plastic and metals?*	
Assessment Opportunities	Header Sheet will be used by teacher and pupil for both formative and summative assessment throughout activities.	Peer Assessment - pupils will ask a friend for a comment about their final box. Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	

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Topic	Isometric Drawing and shading techniques	Aluminium Dog Tag. An introduction to working with metal.	Aluminium Dog Tag. An introduction to working with metal.	Aluminium Dog Tag. An introduction to working with metal.	Aluminium Dog Tag. An introduction to working with metal.	Aluminium Dog Tag. An introduction to working with metal.	
Challenge Objective and Content (for all learners)	How to apply knowledge of isometric in order to draw an exploded drawing of a treasure box. *Challenge: Can you use the techniques that you have been shown to create an "exploded drawing" independently?*	Introduction to tag project. Simple engineering drawing. Aluminum theory – material properties and characteristics *Challenge: What are the main characteristics of aluminum?*	Demonstration on how to cut and file aluminium. Including cross filing, draw filing and removal of burrs. *Challenge: Can you apply your prior knowledge of sawing wood to successfully sawing metal?*	Demonstration on how to drill aluminium and how to use letter stamps correctly and with accuracy. *Challenge: Can you use a range of letters and decorative techniques to create an interesting and successful key tag?*	Demonstration on how to anneal aluminium and shape aluminium using a former *Challenge: Can you explain what work hardening is?*	Maths task: **Challenge:** Can you use your maths knowledge to calculate how many tags can be cut from a single piece of aluminium?	**SUMMER**
Inspire Opportunities	*What are the advantages of using an exploded drawing for instruction manuals for companies such as IKEA?*	*Is aluminium a Ferrous Metal or Non - Ferrous metal?*	*What QC checks could you make to check that the burrs have been removed?*	*How are you going to plan for accuracy?*	*Why does heating metal make it easier to shape?*	*What do the terms nesting and tessellation mean and why are they important?*	
Assessment Opportunities	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	Header Sheet will be used by Teacher and Pupil as a mixture of formative and self-assessment throughout the activities.	